

STRENGTHENED BOND COATS FOR THERMAL BARRIER COATINGS

ABSTRACT

[0041] A strengthened bond coat for improving the adherence of a thermal barrier coating to an underlying metal substrate to resist spallation without degrading oxidation resistance of the bond coat. The bond coat comprises a bond coating material selected from the group consisting of overlay alloy coating materials, aluminide diffusion coating materials and combinations thereof. Particles comprising a substantially insoluble bond coat strengthening compound and having a relatively fine particle size of about 2 microns or less are dispersed within at least the upper portion of the bond coat in an amount sufficient to impart strengthening to the bond coat, and thus limit ratcheting or rumpling thereof.